



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,373	06/23/2003	Hem P. Takiar	SDK1P014/370	1692
22434	7590	12/15/2004	EXAMINER	
BEYER WEAVER & THOMAS LLP P.O. BOX 778 BERKELEY, CA 94704-0778			MALDONADO, JULIO J	
			ART UNIT	PAPER NUMBER
			2823	

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/602,373

Applicant(s)

TAKIAR, HEM P.

Examiner

Julio J. Maldonado

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) 22-26 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 27-54 is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☒ Claim(s) 17-19 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2004/03/19</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 1-21 and 27-54 in the reply filed on 09/23/2004 is acknowledged. The traversal is on the ground(s) that "examination of all claims in a single application... would be more efficient and would also not unduly burden the Examiner...". This is not found persuasive because the claims are directed to inventions that have different classification and require different search.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 20 recites, "...wherein electrically testing the instances is performed...". However, there is no mention of said electrical testing earlier in the claim or in its independent claim, rendering the claim indefinite.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

Art Unit: 2823

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-3, 7-10, 12, 15 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Bolken et al. (U.S. 2004/0229401 A1).

In reference to claim 1, Bolken et al. (Figs.2A-2F and Fig.5) teach a method for concurrently forming a plurality of integrated circuit products, said method comprising providing a multi-instance leadframe or substrate having a plurality of instances; attaching one or more dies to each of the instances on at least one side of the multi-instance leadframe or substrate; electrically connecting each of the one or more dies to the respective instance of the leadframe or substrate; thereafter encapsulating together the plurality of instances on the at least one side of the multi-instance leadframe or substrate with a molding compound; and subsequently singulating each of the plurality of instances using at least non-linear shaping of at least one region of each of the plurality of instances, thereby forming the integrated circuit products. Furthermore, Bolken et al. further teach attaching prior to encapsulating, one or more passive components to each of the instances.

In reference to claim 2, Bolken et al. teach wherein said electrically connecting includes at least wire bonding each of the one or more dies to the respective instance of the leadframe or wafer.

In reference to claim 3, Bolken et al. teach wherein said encapsulating forms a molded panel.

In reference to claim 7, Bolken et al. teach wherein the substrate is printed circuit board.

In reference to claims 8 and 10, Bolken et al. teach wherein the passive components include capacitors and memory devices and inherently teach wherein said integrated circuit products are memory cards.

In reference to claim 9, Bolken et al. teach wherein the one or more dies are semiconductor dies.

In reference to claims 15 and 16, Bolken et al. teach wherein said encapsulating forms a molded panel, wherein said singulating of each of the instances cuts the molded panel into a plurality of molded packages which are the integrated circuit products and wherein said integrated circuit products are memory cards.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4-6 rejected under 35 U.S.C. 103(a) as being unpatentable over Bolken et al. (U.S. 2004/0229401 A1) as applied to claims 1-3, 7-10, 12, 15 and 16 above, and further in view of Sakaguchi et al. (U.S. 6,677,183 B2).

Bolken et al. substantially teach singulating each of the plurality of instances on the at least one side of the multi-instance leadframe or substrate ([0067]), but fail to disclose wherein said singulating method comprises one of a laser singulating method and high pressure water jet, wherein the water jet includes at least water and an abrasive material. However, Sakaguchi et al. (Figs.1A-3F) teach a method of

Art Unit: 2823

singulating semiconductor dies, wherein said semiconductor dies include elements such as memory devices, wherein said singulating method include laser singulating method and high pressure water jet, wherein the water jet includes at least water and an abrasive material (column 5, lines 7 – 22, and column 7, lines 41 – 56). It would have been within the scope of one of ordinary skill in the art to combine the teachings of Bolken et al. and Sakaguchi et al. to enable the singulating step of Bolken et al. to be performed according to the teachings of Sakaguchi et al. because one of ordinary skill in the art at the time the invention was made would have been motivated to look to alternative suitable methods of performing the disclosed singulating step of Sakaguchi et al. and art recognized suitability for an intended purpose has been recognized to be motivation to combine. MPEP 2144.07.

8. Claims 11, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolken et al. (U.S. 2004/0229401 A1) as applied to claims 1-3, 7-10, 12, 15 and 16 above, and further in view of Bolken (U.S. 6,444,501 B1).

Bolken et al. substantially teach all aspects of the invention but fail to teach wherein the integrated circuit products are memory cards and further teaching applying a mark to the molding compound for each of the plurality of instances, wherein the mark is a printed mark. However, Bolken in a method of forming peripheral memory cards (Figs.1 and 5) teaches providing an area (40) on its molding compound with a printed mark for labeling purposes (column 5, lines 31 – 41), and wherein the memory card is molded so that its product is a non-rectangular memory card (column 6, lines 41 – 54).

Art Unit: 2823

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Bolken et al. and Bolken to enable forming a printed mark in Bolken et al. as taught by Bolken. It would also have been obvious to one of ordinary skill in the art at the time the invention was made to configure the memory card of Bolken et al. as taught by Bolken for the further advantage of identifying the end of the semiconductor card having external contacts and to ensure that a user inserts the card in a proper orientation (column 6, lines 41 – 54).

Allowable Subject Matter

9. Claims 17-19 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claims 27-54 are allowed.

11. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fail to teach applying a coating to each of the memory cards after singulating; affixing an outer casing to each of the memory cards after said singulating; wherein the non-linear shaping of each of the instances by said singulating is achieved through curvilinear or non-rectangular cutting during said singulating.

Conclusion

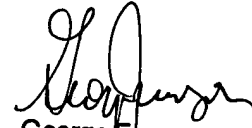
Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is 571-272-2800. See MPEP 203.08.

Art Unit: 2823

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Julio J. Maldonado whose telephone number is (571) 272-1864. The examiner can normally be reached on Monday through Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri, can be reached on (571) 272-1855. The fax number for this group is 703-872-9306 for before final submissions, 703-872-9306 for after final submissions and the customer service number for group 2800 is (703) 306-3329. Updates can be found at <http://www.uspto.gov/web/info/2800.htm>.

Julio J. Maldonado
December 2, 2004

Julio J. Maldonado
Patent Examiner
Art Unit 2823


George Fourson
Primary Examiner